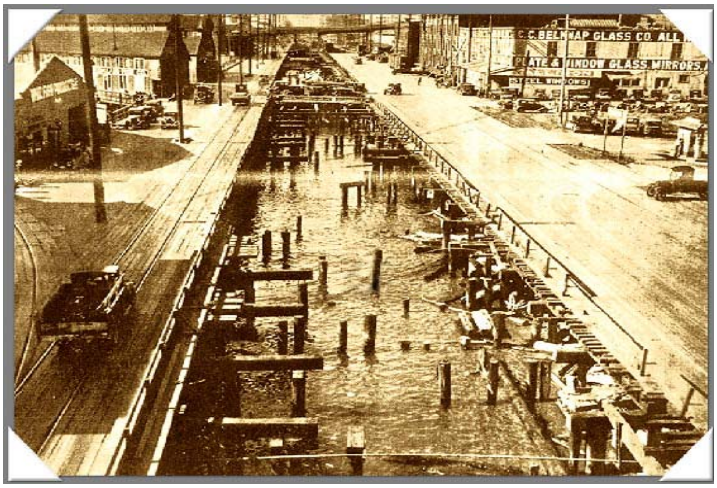
The Alaskan Way Seawall
Fact Sheet

History
The Alaskan Way seawall was built between 1916 and 1936 to support rail and road access to shipping piers. Previously, the rail line and roadway rested on timber piles over Elliott Bay.

The seawall consists of several different kinds of retaining structures. Unreinforced concrete gravity wall sections were built in 1916 in the central waterfront area, along with pile-supported reinforced concrete structural sidewalk sections between the gravity walls. This type of construction makes up approximately 2,000 lineal feet of the seawall. The remaining nearly 8,000 lineal feet consists of steel and concrete bulkheads anchored by timber relieving platforms, in the poor, liquefiable soil that was used to fill behind the seawall. The wall sections supported by the timber relieving platforms, which are up to 50 feet wide, were built completed in 1936.



1931 photograph showing rail line and roadway on pilings.

The Seawall's Significance
- The Seawall supports the Alaskan Way Viaduct carries State Route 99, which is on the National Highway System. More than 110,000 vehicles per day travel on the structure. It is one of two main north-south routes through the city for freight and general-purpose traffic.
- Downtown Seattle was developed with seawall in place and relies on its continued existence.
- The seawall supports and protects the main rail line in the region, which serves both north/south and east/west freight and passenger rail service. Loss of the Viaduct and Seawall would disrupt or halt access to the Port of Seattle and freight rail traffic
- Goods shipped through the Port of Seattle travel are delivered to all 48 of the Lower US. Value of goods shipped through port in 2001 – over $32 billion
- Seattle is the closest US port to Asia
- BNSF's mainline railroad is a major freight route linking the NW with Eastern markets
- The US Coast Guard's 13th District headquarters is located on Seattle's waterfront
- The seawall supports and protects major utilities, including power for downtown, sewer, storm water, natural gas, and telecommunications.

What's at Risk?
The seawall has served its purpose well, but is showing the effects of its age and the corrosive marine environment, and the original design did not account for seismic forces. The 2001 Nisqually earthquake raised questions about seawall's soundness. Subsequent studies and site investigation verified that the wall's structural condition is poor and the existing structures do not have adequate capacity to meet the demands of current earthquake design loadings. One of the primary vulnerabilities of the seawall is its inability to resist loads associated with liquefaction of the loose fills on which it is constructed. At earthquake magnitudes similar to that of the Nisqually

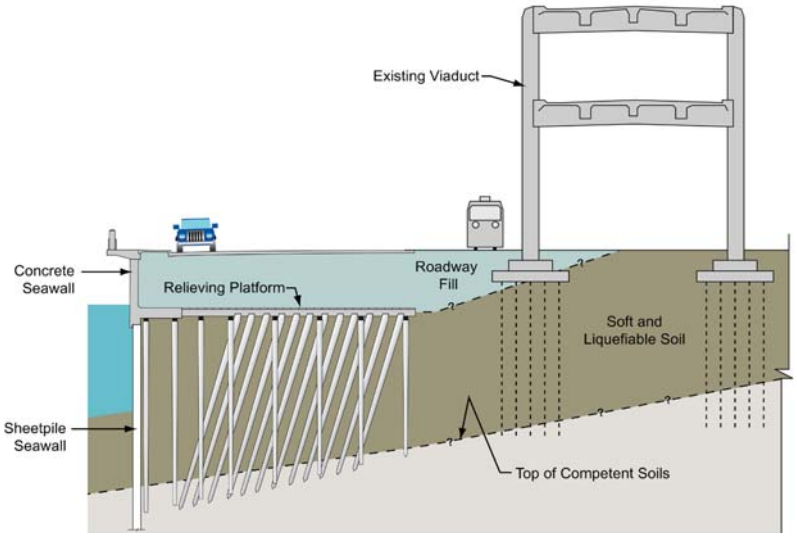


Diagram of existing seawall showing structure and soils.

Earthquake, liquefaction of waterfront fills is expected to occur. The likelihood of such a seismic event occurring is the next 10 years is 1 in 20.

In addition, recent subsurface investigations revealed significant damage to the timber relieving platform from a type of marine borer called the gribble (genus *Limnoria)*. Found in multiple locations, the damage means that the seawall's vulnerability to an earthquake is greater than previously thought.

Seawall Project Funding

The City of Seattle has committed $495,000 to temporary repairs of the Seawall in the last five years. Additionally, Seattle committed $5 million in local funds to the Alaskan Way Viaduct and Seawall Study, specifically to analyze seawall alternatives and develop a recommendation for replacement of the seismically vulnerable Alaskan Way Viaduct.